

CLAIM LISTING AND STATUS

1. (Currently Amended) A computer-based method for assisting at least two parties involved in a negotiation problem with a plurality ~~any number~~ of variables in achieving a mutually satisfactory agreement on decisions to be taken on ~~one or more of~~ said variables comprising the steps of:

a) providing a negotiation system including at least one programmed computer system and an associated interactive graphical interface for interactive input and output of negotiation information to and from said computer system, said computer system being programmed to

- display said negotiation information, including packages that each represent a potential agreement on decisions to be taken on a plurality ~~one or more of~~ said variables of said negotiation problem in response to entered preference data from each of said parties;
- generate at least one said package;
- keep confidential any private information and display that information only to the party to whom that information belongs; and
- display negotiation information that is not private, including mutually acceptable packages, only to those parties with permission to see that information;

b) entering information into said negotiation system through said graphical interface, including information describing the negotiation variables, their relationship to each other, any constraints on the negotiated outcomes of those variables, and information pertaining to each said party's preferences on the outcome of each of said variables;

c) optionally each party also entering into said negotiation system through said graphical interface, a proposed private package of values for each of said variables that the party is willing to accept as a solution to the negotiation problem proposals and/or other packages (which may be declared private);

d) in response to said entering of said information and said proposed packages, said negotiation system generating a satisfaction rating for each of said packages and displaying said rating to the party that entered the package, said rating representing a level of satisfaction that said package would provide the party that entered said package using each party's inputted information to evaluate packages by specifying a level of satisfaction according to each party's own preferences;

e) in response to generation of said satisfaction ratings, each party entering into said negotiation system confirmation of their acceptance of said satisfaction rating as defining a level of satisfaction that they are tentatively willing to accept for any packages generated by said negotiation system for one or more parties, a confidential acceptable level of satisfaction and, for each of those parties, their willingness for maximum possible corresponding satisfaction levels for other parties to be generated for and revealed to other parties;

f) if possible, said negotiation system generating an equivalent package to be submitted to each of said parties as a potential agreement to the negotiation problem that provides each party to the negotiation with a satisfaction rating that is equal to or better than the satisfaction rating of each party's proposed package; and, if not possible, said negotiation system requesting one or more times that one or more of said parties enter a lower package satisfaction rating that the party is willing to accept until said negotiation

system can generate said equivalent package given said entered information, for each given said confidential acceptable level of satisfaction declared by said one or more parties, said negotiation system using optimization techniques to generate a fair distribution of maximum possible satisfaction levels for each other party; and

g) displaying the values for all of the variables in said equivalent package to each of said parties so that the parties can determine whether they accept the equivalent package as a tentative agreement to the negotiation problem revealing said maximum possible satisfaction levels to said other parties;

if and when each of all said other parties to the negotiation (or a subset, if coalitions are allowed) accept the said maximum satisfaction level revealed to that party, said negotiation system using optimization techniques with said entered information to generate an equivalent package that would give at least as much satisfaction to each party as they have declared acceptable;

revealing said equivalent package to all parties concerned;

using each party's inputted information to evaluate said equivalent package in terms of a specified level of satisfaction according to each party's own preferences; and

declaring as a tentative agreement among two or more parties, any package that has been accepted by each of those parties.

2. (Currently Amended) The computer-based method of claim 1, further including the step of said negotiation system using optimization techniques to generate an improved package that provides a satisfaction rating for at least one of said parties that is better than the satisfaction rating provided to that party by said equivalent package, but provides at least the same satisfaction rating as does said equivalent package of all other of said parties is Pareto optimal (if not already) according to said entered preferences (or changed preferences) and displaying said improved package on said one or more graphical interfaces.

3. (Currently Amended) The computer-based method of claim 2, wherein said step of providing a negotiation system including at least one computer system and an associated interactive graphical interface further comprises:

- a) providing a plurality of independent, separate computer systems and associated interactive graphical interfaces, one each for each of said parties, each said independent, separate computer system being programmed to receive and process information from each party, including that pertaining to each of said party's preferences on the outcome of each said variable involved in said negotiation problem ~~conflict~~; and,
- b) providing a central computer system located at a neutral site and a plurality of communication links connecting each of said independent, separate computer systems to said central computer system, said central computer system being programmed to receive preference information from each of said independent, separate computer systems, generate at least one package representing a potential

solution to the negotiation problem in response to entered preference information from each of said independent, separate computer systems, and securely transmit generated information and other information to be communicated between parties; wherein, the information pertaining to each of said party's preferences remains confidential to each party.

4. (Original) The computer-based method of claim 3, further including the step of entering into said negotiation system other information from which said preference information may be derived, in an automated process not requiring a graphical interface.

5. (Original) The computer-based method of claim 1, further including the step of entering into said negotiation system other information from which said preference information may be derived, in an automated process not requiring a graphical interface.

6-18. (Cancelled)

19. (New) The computer-based method of claim 1, further including the steps of said negotiation system generating for each proposed package entered by said parties, a satisfaction rating that each said package will provide for other parties to the negotiation and displaying said satisfaction rating to each of the other parties to the negotiation.

20. (New) The computer-based method of claim 19, wherein if a proposed package entered by one of said parties generates a satisfaction rating for each of the other parties to the negotiation that is acceptable to each of the other parties, said negotiation system will generate said equivalent package that provides each party to the negotiation with a satisfaction rating that is equal to or better than the satisfaction rating the party has accepted.

21. (New) A computer-based apparatus for assisting at least two parties involved in a negotiation problem with a plurality of variables in achieving a mutually satisfactory agreement on decisions to be taken on said variables comprising:

- a plurality of independent, separate computer systems, one for each of said parties, each said computer system being programmed to receive and process communication between parties and/or other information pertaining to each said party's preferences on the outcome of each variable involved in said negotiation problem, including proposals and confidential acceptance of any package;

- a plurality of interactive graphical interfaces connected, one for each of said independent and separate computer systems for input and output of information to and from the corresponding one of said computer systems; and

- a central computer system located at a neutral site and in communication with each of said separate computer systems, said central computer system being programmed to:

- a) receive private information from each of said parties, including information describing the negotiation variables, their relationship to each other,

any constraints on the negotiated outcomes of those variables, and information pertaining to each said party's preferences on the outcome of each of said variables, and a proposed package of values for each of said variables that the party is willing to accept as a solution to the negotiation problem;

b) generate a satisfaction rating for each of said proposed packages and sending said rating to the party that entered the package, said rating representing a level of satisfaction that said proposed package would provide the party that entered said proposed package;

c) receive confirmation of each party's acceptance of said satisfaction rating as defining a level of satisfaction that they are tentatively willing to accept for any packages generated by said central computer;

d) if possible, generate an equivalent package to be submitted to each of said parties as a potential agreement to the negotiation problem that provides each party to the negotiation with a satisfaction rating that is equal to or better than the satisfaction rating of each party's proposed package; and, if not possible, request one or more times that one or more of said parties enter a reduced package satisfaction rating that the party is willing to accept until said central computer can generate said equivalent package; and

e) send the values for all of the variables in said equivalent package to each of said parties so that the parties can determine whether they accept the equivalent package as a tentative agreement to the negotiation problem.

22. (New) The computer-based apparatus of claim 21, wherein said central computer is further programmed to use optimization techniques to generate an improved package that provides a satisfaction rating for at least one of said parties that is better than the satisfaction rating provided to that party by said equivalent package, but provides at least the same satisfaction rating as does said equivalent package of all other of said parties.

23. (New) The computer-based apparatus of claim 21, wherein said central computer is further programmed to generate for each proposed package entered by said parties, a satisfaction rating that each said package will provide for all other of said parties to the negotiation and displaying said satisfaction ratings to each of the other parties to the negotiation.

24. (New) The computer-based apparatus of claim 23, wherein if a proposed package entered by one of said parties generates a satisfaction rating for each of the other parties to the negotiation that is acceptable to each of the other parties, said central computer is further programmed to generate said equivalent package that provides each party to the negotiation with a satisfaction rating that is equal to or better than the satisfaction rating the party has accepted.